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| FORM PTO-1390 (Modified) U.S. PATENT AND TRADEMARK OFFICE; U.S. DEPARTMENT OF COMMERCE (REV. 12-2004) | | ATTORNEY'S DOCKET NUMBER PP021454.00004 |
| TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371 | | U.S. APPLICATION NO. (If known, see 37 CFR 1.5) Unassigned 10/580050 |
| INTERNATIONAL APPLICATION NO. PCT/US2004/039333 | INTERNATIONAL FILING DATE 19 November 2004 | PRIORITY DATE CLAIMED 19 November 2003 |
| TITLE OF INVENTION METHODS AND REAGENTS FOR TREATING, PREVENTING AND DIAGNOSING BUNYAVIRUS INFECTION | | |
| APPLICANT(S) FOR DO/EO/US Qui-Lim CHOO, Michael HOUGHTON, Elizabeth SCOTT and Amy WEINER | | |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information: | | |
| <ol style="list-style-type: none"> <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a submission under 35 U.S.C. 371. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a submission under 35 U.S.C. 371. <input type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below. <input type="checkbox"/> The US has been elected (Article 31). <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c)(2)) <ol style="list-style-type: none"> <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> has been communicated by the International Bureau. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US). <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)). <ol style="list-style-type: none"> <input type="checkbox"/> is attached hereto. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4). <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3)) <ol style="list-style-type: none"> <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau). <input type="checkbox"/> have been communicated by the International Bureau. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired. <input type="checkbox"/> have not been made and will not be made. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)). <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)). <input type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)). <input type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409). <input type="checkbox"/> A copy of the International Search Report (PCT/ISA/210). | | |
| <p>Items 13 to 23 below concern document(s) or information included:</p> <ol style="list-style-type: none"> <input type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included. <input type="checkbox"/> A FIRST preliminary amendment. <input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment. <input type="checkbox"/> A substitute specification. <input type="checkbox"/> A power of attorney and/or change of address letter. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13/er.2 and 37 CFR 1.821 - 1.825. <input type="checkbox"/> A second copy of the published International Application under 35 U.S.C. 154(d)(4). <input type="checkbox"/> A second copy of the English language translation of the International Application under 35 U.S.C. 154(d)(4). <input checked="" type="checkbox"/> Express Mail Label No. EV351354028US <input checked="" type="checkbox"/> Other items or information: copy of Unsigned Declaration for Patent Application copy of published specification | | |

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

| U.S. APPLICATION NO (if known, see 37 CFR 1.5) 10/1580050 | | INTERNATIONAL APPLICATION NO. PCT/US2004/039333 | | ATTORNEY'S DOCKET NUMBER PP021454.0004 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--------------|--|--|--|----------------------|--------|--------------|--------------|------|--|--|--------------|-----------|----|---|---------|---------------|--------------------|----------|----|---|----------|---------------|---|--|--|--|------------|-------------|--|--|--|--|--------------------------------------|----------------------|--|--|--|--|--|--|---------------------------------|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|------------------------|--|--|--|--|--|-----------------------|--|--|--|--|--|
| 24. The following fees are submitted: | | | | Applicant use | Office use | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> a) Basic national fee \$300.00 <input checked="" type="checkbox"/> b) Examination fee \$200.00 <input checked="" type="checkbox"/> c) Search fee \$500.00 | | | | \$ \$300.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | \$ \$200.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | \$ \$500.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL OF ABOVE CALCULATIONS = | | | | \$1000.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <input checked="" type="checkbox"/> Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each additional 50 sheets of paper or fraction thereof. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Sheets | Extra Sheets | Number of each additional 50 or fraction thereof (round up to a whole) | | RATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 188 - 100 = | 88 /50 = | 2 | | x \$250.00 | \$ \$500.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Surcharge of \$130.00 for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492(e)). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <thead> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th colspan="3">RATE</th> </tr> </thead> <tbody> <tr> <td>Total claims</td> <td>96 - 20 =</td> <td>76</td> <td>x</td> <td>\$50.00</td> <td>\$ \$3,800.00</td> </tr> <tr> <td>Independent claims</td> <td>20 - 3 =</td> <td>17</td> <td>x</td> <td>\$200.00</td> <td>\$ \$3,400.00</td> </tr> <tr> <td colspan="4">MULTIPLE DEPENDENT CLAIMS (if applicable) <input checked="" type="checkbox"/></td> <td>+ \$360.00</td> <td>\$ \$360.00</td> </tr> <tr> <td colspan="4"></td> <td>TOTAL OF ABOVE CALCULATIONS =</td> <td>\$ \$9,190.00</td> </tr> <tr> <td colspan="6"> <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2. </td> </tr> <tr> <td colspan="6">SUBTOTAL = \$ \$9,190.00</td> </tr> <tr> <td colspan="6">Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).</td> </tr> <tr> <td colspan="6">TOTAL NATIONAL FEE = \$ \$9,190.00</td> </tr> <tr> <td colspan="6">Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property + \$ \$0.00</td> </tr> <tr> <td colspan="6">TOTAL FEES ENCLOSED = \$ \$9,190.00</td> </tr> <tr> <td colspan="6">Amount to be refunded:</td> </tr> <tr> <td colspan="6">Amount to be charged:</td> </tr> </tbody> </table> | | | | | | CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | | | Total claims | 96 - 20 = | 76 | x | \$50.00 | \$ \$3,800.00 | Independent claims | 20 - 3 = | 17 | x | \$200.00 | \$ \$3,400.00 | MULTIPLE DEPENDENT CLAIMS (if applicable) <input checked="" type="checkbox"/> | | | | + \$360.00 | \$ \$360.00 | | | | | TOTAL OF ABOVE CALCULATIONS = | \$ \$9,190.00 | <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2. | | | | | | SUBTOTAL = \$ \$9,190.00 | | | | | | Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)). | | | | | | TOTAL NATIONAL FEE = \$ \$9,190.00 | | | | | | Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40 per property + \$ \$0.00 | | | | | | TOTAL FEES ENCLOSED = \$ \$9,190.00 | | | | | | Amount to be refunded: | | | | | | Amount to be charged: | | | | | |
| CLAIMS | NUMBER FILED | NUMBER EXTRA | RATE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total claims | 96 - 20 = | 76 | x | \$50.00 | \$ \$3,800.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Independent claims | 20 - 3 = | 17 | x | \$200.00 | \$ \$3,400.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MULTIPLE DEPENDENT CLAIMS (if applicable) <input checked="" type="checkbox"/> | | | | + \$360.00 | \$ \$360.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | TOTAL OF ABOVE CALCULATIONS = | \$ \$9,190.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| TOTAL FEES ENCLOSED = \$ \$9,190.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amount to be refunded: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Amount to be charged: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| a. <input checked="" type="checkbox"/> A check in the amount of \$ <u>\$9,190.00</u> to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is _____ c. <input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. <u>03-1664</u> . A duplicate copy of this sheet is enclosed. d. <input type="checkbox"/> Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SEND ALL CORRESPONDENCE TO: NOVARTIS VACCINES AND DIAGNOSTICS Corporate Intellectual Property-R338 P.O. Box 8097 Emeryville, California 94662-8097 US Customer No. 27476 | | |  SIGNATURE Michael J. Moran NAME <u>42,013</u> REGISTRATION NUMBER | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

PATENT
PP021454.0004

10/580050
IAP12 Rec'd PCT/PTO 19 MAY 2006

**PATENT COOPERATION TREATY
IN THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US)**

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| International Application No. PCT/US2004/039333 | International Filing Date 19 November 2004 | Priority Date Claimed 19 November 2003 |
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Title of Invention

**METHODS AND REAGENTS FOR TREATING, PREVENTING AND DIAGNOSING BUNYAVIRUS
INFECTION**

Applicants for DO/EO/US:

Qui-Lim CHOO, Michael HOUGHTON, Elizabeth SCOTT and Amy WEINER

CERTIFICATE OF MAILING BY EXPRESS MAIL

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

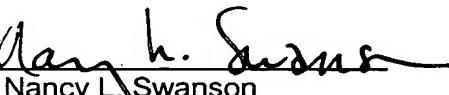
Sir:

Express Mail Mailing Label No.: EV351354028US

Date of Deposit: 19 May 2006

I hereby certify that the attached Transmittal Letter to the United States Designated/Elected Office (DO/EO/US) Concerning a Filing Under 35 U.S.C.371, copy of unsigned Declaration for Patent Application, copy of Published Specification, Check No. 9089 in the amount \$9190.00 and Postal Receipt Card are being deposited with the United Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R.1.10 on the date indicated above and addressed to the Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: 19 May 2006


Nancy L. Swanson

Novartis Vaccines and Diagnostics, Inc
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Emeryville, California 94608
United States of America